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ANALYSIS OF GROUND FORCE STRUCTURE ON NATO'S NORTHERN FLANK. (U)

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Examines differences in approaches to defense planning in NATO Europe resulting in qualitative differences in force structures. It focuses on the Danish and Norwegian ground forces because the two forces' structures are sufficiently different to demonstrate the analytic framework and the need to look more closely at qualitative differences. This Note attempts to deal with such questions as: What are the conscripts and the reserves used for? How do these groups fit into the force structure? In what types of units are the conscripts trained? How does this relate to reserve functions? What is the difference between the peacetime and wartime force structures of the two countries? An initial section describes the historical, political, social, geographic, and other factors that defense planners must take into consideration. An understanding of these national factors is required to assess current national policies or evaluate alternative policies. 31 pp. (JM)

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ANALYSIS OF GROUND FORCE STRUCTURES ON NATO'S NORTHERN FLANK

Ragnhild Sohlberg

A Rand Note

prepared for the

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE/
MANPOWER, RESERVE AFFAIRS AND LOGISTICS



PREFACE

This Note was prepared as part of Rand's Manpower, Mobilization, and Readiness Program, sponsored by the Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics)—OASD(MRA&L). Manpower issues are assuming an ever greater importance in defense planning and budgeting. This studies program is developing broad strategies and specific solutions for dealing with present and future defense manpower problems, including new methodologies for examining broad classes of manpower problems and specific, problem-oriented research. In addition to providing analysis of current and future manpower issues, this studies program will contribute to a better general understanding of the manpower problems confronting the Department of Defense.

The material contained here is Chapter III of a forthcoming Rand report on defense manpower policies as they apply to NATO Ground Forces. Chapter II, "Defense Manpower Policies in Northern and Central European NATO," is also published separately as a Rand Note (N-1314-MRAL). Other sections of the report will deal with an analysis of the mobilization process, the development of a methodology for evaluating alternative manpower policies for the ground forces of individual nations, and a demonstration of the methodology for the case of Norway.

SUMMARY

This Note examines differences in approaches to defense planning in NATO Europe resulting in qualitative differences in force structures. It focuses on the Danish and Norwegian ground forces because the two forces' structures are sufficiently different to demonstrate the analytic framework and the need to look more closely at qualitative differences. The Note attempts to deal with such questions as: What are the conscripts and the reserves used for? How do these groups fit into the force structure? In what types of units are the conscripts trained? How does this relate to reserve functions? What is the difference between the peacetime and wartime force structures of the two countries?

An initial section describes the historical, political, social, geographic, and other factors that defense planners must take into consideration. An understanding of these national factors is required to assess current national policies or evaluate alternative policies.

In view of their geographic and demographic differences, the differences in Danish and Norwegian ground force structures seem to be appropriate. The Danish forces are more capital- or equipment-intensive and therefore require more highly trained personnel. With the 1973 Defense Agreement, the Danes introduced an all-volunteer standing force, and conscripts are now used solely for wartime augmentation or mobilization assignments. The conscripts first receive nine months of "apprentice" training in a separate Training Force, bypass the standing force, and, upon discharge from regular active duty are assigned directly to mobilization units. A volunteer or enlisted man first receives apprentice or basic training for nine months, then is assigned to the Standing Force for at least two years, and, upon discharge from regular active duty, is assigned to a mobilization unit.

In Norway, neither the conscripts nor the few volunteers bypass the Standing Force. The Norwegian force structure is characterized

by a strong emphasis on conscription, a 12-month regular active-duty period, an extended period of retention in reserve status with limited reserve training, and, as in Denmark, a significant and fully equipped mobilization component. The technology best adapted to such manpower policies is stable, cheap, and simple to operate.

The shorter active-duty period demanded of Danish conscripts may be justified by the simpler tasks they are expected to perform, and by the fact that they are trained exclusively for their reserve function. Norwegian conscripts also have to perform tasks in the Standing Force during their active-duty period (for nine of the twelve months), so both the requirement for additional training and the need for readiness forces require at least three additional months of active duty.

The fewer days of refresher training or reserve duty observed in Denmark may be justified by the shorter time that Danish conscripts are obligated for peacetime mobilization or reserve duty. The shorter total training period of Danish conscripts is also partly offset by the much larger proportion of long-term volunteers.

In both Norway and Denmark, an active-duty conscript is trained for and is expected to fulfill the same wartime function as the one he will be assigned to in the Mobilization Force. Hence, upon his initial entry into the armed force, his lifetime assignment is generally determined.

The Danish wartime Field Army consists of five armored infantry brigades and the Norwegian of 12 light infantry brigades. In Denmark, the manpower in the Standing Force is distributed in key positions in all five brigades, and in Norway these men make up one complete standing brigade and some smaller units. The remainder of the Norwegian wartime manpower is expected to man the 11 mobilization brigades.

If Norway adopted the Danish force structure and associated deployment policies--or vice versa--the defense capabilities of both nations would be reduced. One may conclude that force structures are not "standardized" nor should they be.

ACKNOWLEDGMENTS

The research underlying this Note would have been impossible without generous assistance and cooperation from European defense authorities, too many to mention individually. However, an especial debt of gratitude is owed to Erik Himle, Secretary General of the Norwegian Defense Commission and former Permanent Under Secretary of Defense; to General (Ret.) Eigill Wolff, former Danish Joint Chief of Staff and Commander Allied Forces Baltic Approaches (COMBALTAP); to Major General Ulf Berg, DKØ, Norway; and to Brigadier Ola Litleskare, Plan and Budget Division, Defence Command Norway (DEFCONOR).

Lt. Col. Birger Setsaas, Army Staff, DEFCONOR, and Major F. R. Vadmand, Army Staff, Danish Defence Command, patiently spent hours explaining the force structures of the Norwegian and Danish armies; they also commented on earlier drafts.

Any misinterpretations of these two countries' force structures are my sole responsibility.

I am also indebted to William A. Mauer of the Naval Postgraduate School, Monterey, California, whose comments on an earlier draft manuscript led to many improvements. Gene H. Fisher and David Novick reviewed and edited the follow-on version, and Nancy Nimitz served as the helpful final reviewer.

Laura Goeglein deserves specific mention for her excellent typing and retyping of the manuscript and for her interest in this project. Eva Zaidain of the Naval Postgraduate School assisted with Figures 2 and 3.

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ANALYSIS OF GROUND FORCE STRUCTURES
ON NATO'S NORTHERN FLANK¹

INTRODUCTION

Differences in approaches to defense manpower planning in NATO Europe provide a framework for a comparative, static assessment of observed manpower policies. Danish and Norwegian ground forces are sufficiently different to demonstrate the analytic framework and the need to look more closely at qualitative differences.²

An earlier Note describes and analyzes the manpower procurement and utilization policies of seven northern and central European NATO countries and some of the environmental factors that defense planners take into consideration.³ The various NATO members have taken diverse approaches to manpower procurement and utilization. Therefore, such traditional measures as defense budgets, aggregate manpower numbers, length of service, and the like must be interpreted in the light of qualitative differences. A purely quantitative analysis is insufficient for assessing, comparing, or summing NATO's manpower capabilities or for comparing NATO's capabilities with those of the Warsaw Pact. Qualitative considerations are numerous: they include the ability and background of manpower upon induction (level of civilian training and education, pre-induction military training, etc.), the time-phasing of military training, the efficiency with which the training period

¹Strictly speaking, the roughly 30,000 West German ground forces in Schleswig-Holstein are included in the Northern Flank. However, this Note limits itself to Norway and Denmark. Inclusion of Schleswig-Holstein would necessitate looking at the West German force structure in general.

²The civilian sector support structure is not discussed here. However, the degree to which NATO countries explicitly rely on civilian sector resources in case of crisis has influenced the force structures. A legal commitment is generally required before such factors can be included in force planning considerations.

³Ragnhild Sohlberg, *Defense Manpower Policies in Northern and Central European NATO*, The Rand Corporation, N-1314-AF, February 1980.

is utilized, the effective training period (length of work week/day), and, in the case of reservists, the opportunities exploited for maintaining military skills by carefully matching relevant civilian training, education, or employment with military functional assignments.

This Note uses the force structure as a framework for comparing and assessing manpower as it affects force capabilities and readiness. The comparison is only on an aggregate level to get an indication of the degree of "rationality" in observed policies and to set the stage for the analysis in subsequent studies.¹ The definition of *force structure* used in this study captures (1) the recruiting and augmentation of manpower, (2) the time-phasing of military training over the total service life of the soldier, (3) the organization of manpower and equipment into units, and (4) the ratio of forces-in-being to the mobilization component.

Questions with which this Note deals include these:

- o What are the conscripts used for? How do they fit into the force structure?
- o What are the reserves used for? How do they fit into the force structure?
- o In what types of units are conscripts trained? How does this relate to reserve functions?
- o What is the difference between the peacetime and wartime force structures of the two countries?

Subsequent sections provide information on the defense environment in Denmark and Norway, describe the major manpower procurement and utilization policies of these two countries, and describe their ground force structures. The final sections draw comparisons and some conclusions based on what was learned from the previous sections.

¹The complete Ph.D. dissertation from which this Note is drawn will include analysis of alternative manpower policies.

THE DEFENSE ENVIRONMENT

This section expands on the environmental factors that defense planners take into consideration and constrain their actions. An appreciation of these national factors is required to assess current national policies and evaluate alternative policies. Factors that have influenced current policies include geostrategic location, demography, perceptions of external threat,¹ economic conditions, political events, and, not least, traditions. Only when we have some information on background conditions can we make some judgment about the degree of "rationality" of observed policies.

Norway, together with Denmark and Schleswig-Holstein (the northern tip of West Germany), constitutes the Northern Flank of NATO. The Northern Flank lies on the shortest air route between the main military-political, economic, and administrative centers of the United States and the Soviet Union. This is an area where the Soviet Union is not protected by Warsaw Pact "buffer" countries. Norway shares about 122 miles (196 km) of border with the Kola Peninsula where the USSR has developed the world's largest military base complex. Norway also shares 716 km of border with Finland and 1619 km with Sweden. The geographic "imbalance" of forces in the north has led Norway to deploy the majority of the standing forces to North Norway. This policy is based on two assumptions: (1) that Sweden maintains a credible defense, and (2) that South Norway is protected from an initial attack by NATO's joint defenses, especially by Danish and West German forces.

Denmark is a small country located at the exit from the Baltic. It has a large population, communication is fairly easy, and sources of external reinforcement are close. Norway, however, is a large country with a small population base. Its communications are sparse

¹Countries experiencing or having experienced internal political tensions of various kinds may include *internal* threat perceptions in their defense manpower planning considerations. Certain sub-groups may be excluded from the armed forces for political reasons, or universal or close to universal conscription may be preferred as in France.

and vulnerable to enemy attack and sabotage. The most strategically exposed area is in the north, which is sparsely populated and far from sources of either internal or external reinforcement. In addition, climate and topography require that troops deployed to the area have special training.

Denmark and Norway traditionally have been neutral countries. However, in 1949, both countries decided to abandon neutrality and join NATO.

A unique feature shared by Denmark and Norway is the attitude toward foreign bases and nuclear weapons. During the postwar period both countries adopted the policy of neither permitting foreign troops to be stationed on their soil in peacetime nor nuclear facilities to be established. However, preparations may be made in peacetime for receiving foreign troops in case of crisis.

Table 1 compares some physical and economic characteristics of the two countries and some selected measures of their defense efforts. The per capita Gross National Products (GNP) of the two countries are about the same, but with a 20-percent smaller population base, Norway has over seven times the area to defend.

Taking geographic and demographic conditions into account, the numbers in the lower part of Table 1 are not surprising. As expected, Norway's defense effort is relatively greater than Denmark's regardless of the measure selected. Tables 2 and 3 show that the Danes employ a larger proportion of volunteers in their peacetime armed forces. If the Danish Augmentation Force is included, the peacetime strength of the Army is also somewhat larger than the Norwegian, while the Norwegian Naval and Air Defenses are larger than the Danish. However, Norway's mobilization potential is over twice that of Denmark. Even so, both countries rely heavily on mobilizing manpower in case of crisis. This reliance on mobilization is supported by a Total Defense concept in both countries. A Total Defense organization includes both military and non-military defense. The military defense organization includes the armed forces, joint agencies, and the Home Guard. The non-military defense organization includes civil defense, civilian sector administrative and economic preparedness, health services, and

Table 1
SOME PHYSICAL AND ECONOMIC CHARACTERISTICS OF DENMARK AND NORWAY
AND SELECTED MEASURES OF DEFENSE EFFORTS

Physical and Economic Characteristics					
Country	Population (mid 1975) 10 ⁶ (mil.)	Area (sq. mi.)	Population Density (pop./sq. mi.)	GNP (1975) \$10 ⁹ (bil.)	Per capita GNP (1975) \$
Denmark	5.06	16,629	302.6	36.0	7,106
Norway	4.01	125,051	32.7	27.8	6,944

Selected Measures of Defense Efforts					
Defense Budget			Military Manpower (excluding civilians) ^a		
Country	% of GNP (1975)	% of Public Expenditures (1975)	Per capita (1976) \$	Peacetime Forces	Peacetime- and Mobilization Forces
Denmark	2.2	7.2	168	2.6	1.1
Norway	3.1	7.6	223	3.0	4.2

SOURCES: *Encyclopaedia Britannica*, 1976; and *Military Balance: 1976/77*.

^aPercent of total population.

Table 2

DENMARK'S MILITARY MANPOWER
(Actual strength as of April 1977)

Service	Peacetime Strength		Augmentation Force	Mobilization Forces		
	Officers and Enlisted ^a	Conscripts		Total	Field Army	Local Defense
Army	12,773	6,428		19,201	41,000	24,000
					65,000	
Navy	4,050	1,106		5,156		2,800
Air Force	5,853	990		6,843		7,500
Total	22,676	8,524		31,200	4,500	75,300 ^b
Percentages	73	27		100		

SOURCE: Chief of Defense, *The Danish Armed Forces*, Vedbaek, October 1977, Annex 9.

^aThese numbers include apprentice regulars--i.e., conscripts in their first nine months of active duty who have signed up for further voluntary service--and conscript NCOs and corporals (or leading seamen).

^bNot included in these numbers are the Home Guard of 72,000, of which 500 are in full-time service, and the Personnel Replacement Depot of 12,000.

Table 3
NORWAY'S MILITARY MANPOWER
(1976)

Service	Peacetime Strength		Mobilization Forces	
	Officers and Enlisted	Conscripts ^a	Total	Field Army Local Defense
Army	4,000	16,000	20,000	70,000 60,000
				130,000
Naval Defense ^b	4,060	4,940	9,000	22,000
Air Defense ^c	6,000	4,000	10,000	18,000
Total	14,060	24,940	39,000	170,000
Percentages	40	60	100	

SOURCE: *Military Balance 1976/77*, Institute for International and Strategic Studies, London, 1976.

^aThese numbers include conscript sergeants and corporals, many of whom serve longer than the minimum obligatory first term.

^bNaval Defense includes the Navy and the Coastal Artillery. The Coastal Artillery has the same length of obligatory first-term service as the Army--12 months--and also relies heavily on mobilization.

^cThe Air Defense includes the Air Force and the Air Artillery. The Air Artillery also has 12 months of obligatory first-term service and relies heavily on mobilization.

information. This "total" approach to defense in Denmark and Norway is supported by unique pieces of legislation that were influenced by the postwar environment.¹ The degree to which this concept is implemented and the reasons behind the apparent similarities differ.

Denmark's Total Defense concept is not as well developed nor as extensively implemented as is Norway's. The Danish mobilization emphasis is *justified* because of "the geographical configuration of the country and the fast means of communication, factors that facilitate a rapid mobilization in the order of 24 hours."² However, the Norwegians reason that the small resource base relative to the defense task *necessitates* a large defense effort--it is imperative to use all available resources and to concentrate the maximum effort in the defense of the nation.

Finally, both countries have developed a long-term approach to defense planning. However, the Danish defense budget is unique in that it is "inflation-proof." The individual items in the long-term defense budget are appropriated in constant monetary values. In contrast, the Norwegian defense appropriations are given in current monetary values incorporating an expected inflation rate. Hence, the level of purchasing power of individual items in the Norwegian defense budget depends on the relationship between the expected or estimated inflation rate and the actual or realized inflation rate of individual items in the budget. The purchasing power of defense appropriations of small countries, in particular, depends to a large degree on exchange rates. This follows because small nations depend largely on procuring weapons and other equipment abroad. They also tend more than large nations to utilize foreign training facilities.

¹For example, the *Law on Military Requisitions of June 23, 1951*, states, "If Norway is involved in a war, the military authorities can requisition everything necessary including property, transportation and communication, manufacturing services, etc. from the civilian sector." Sweden, a third country in the Northern Region of Europe, has a total defense concept similar to those in Denmark and Norway.

²Chief of Defense, *The Danish Armed Forces*, Vedhaek, October 1977, p. 22.

MANPOWER PROCUREMENT AND UTILIZATION POLICIES

Ground forces are manpower-intensive. This discussion covers major manpower procurement and utilization policies for such forces in Denmark and Norway. There are two basic types of military service systems: (1) The all-volunteer force (AVF), which appears in its pure form, and (2) conscription (or draft of compulsory service), which always appears in a mixed form. As shown in Tables 2 and 3, Denmark and Norway rely to different degrees on conscription to meet their manpower needs. The length and pattern of obligatory service and the utilization of conscripts and volunteers also differ. Except for conscript reserve officers, the officer/procurement and training policies are considered to be outside the scope of this study.

Denmark

Traditionally, the major manpower procurement policy in Denmark has been conscription. Because force size is small relative to the population base, selective rather than universal conscription has been the rule.¹ Since the defense reorganization of 1973, only about one-third of each (male) age cohort completes first-term active duty in the military.

The defense reorganization in 1973 also reduced the first-term active-duty period to nine months, plus an additional six months for NCOs and nine months for those who volunteer to serve as reserve officers. In the Army, this active-duty period takes place in a Training Force aimed at training the conscript for his assignment in the Augmentation or the Mobilization Force--for his reserve function.

The all-volunteer (combat-ready) Standing Force recruits only from those who have completed nine months in the Training Force. These volunteers are obligated for at least 24 additional months of active duty: i.e., a minimum of 33 months.

Conscripts who do not volunteer for the Standing Force are assigned directly to a reserve function. Currently conscripts are

¹Universality was only approximated immediately following Danish entry into NATO in 1949.

under military obligation for a total of nine years, and hence are in reserve status for about eight years. In case of war, they are under military obligation until age 50 and may be required in a Civil Defense function until age 55.

Denmark also has a Home Guard; however, this is based solely on volunteerism. Most members have no prior military service. The members sign one-year contracts subject to termination at three months' notice. Those who have not completed military service are obligated to 100 hours of basic training the first year and 50 hours of advanced training annually during the second and third years. Thereafter, a member is under obligation to serve only 24 hours per year.

Norway

The major manpower procurement policy in Norway is also conscription, and the policy is likely to continue. Because of the need for a large defense effort relative to the population base, universal conscription is approximated. About two-thirds of each male cohort complete first-term active duty in the military and about 90 percent perform some function within Total Defense.

The Army conscripts are initially drafted to 12 months active duty (plus 12 additional months for those who volunteer as reserve officers). They typically receive three months of basic training followed by a nine-month assignment in the Standing Field Army in Northern Norway. The Standing Field Army has only a few hundred enlisted volunteers who sign up on non-terminable three-year contracts. They may reenlist twice, but not after they reach 34 years of age.

After the active-duty period, conscripts are first assigned to the Mobilization Field Army until age 34 and then to the Local Defense Force until age 44.¹

¹Men are generally under military obligation from age 19 (in 1973 military obligation started at age 20) until age 45. If war threatens or exists, men are under military obligation until age 55. Men ages 44 to 55 may also be under obligations for special Home Guard duty. Men and women ages 18 to 65 may be required to serve in Civil Defense. *Håndbok for soldaten: Haeren*, UD 17-1, Oslo, August 1973, p. 10.

Both the length of the active-duty period and the amount of refresher training are at any one time determined by the *Storting* (Norwegian Parliament). In 1978 the annual man-day budget for the Army for reserve force training was about 280,000.

Table 4 shows the desired training pattern for conscripts in the Norwegian armed forces. The men in the "average" unit in the Mobilization Field Army are recalled for 21 to 30 days every four years. High priority units are recalled every three years.

The last column shows that not all conscripts serve the same number of days. In effect, Norway is operating under a system of differentiated length of service depending on the complexity of the function: e.g., a total of 468 days of active duty for privates and 510 days for specialists in the Army.

Norway, like Denmark, has a Home Guard. Recruitment is based on both conscription and volunteerism; however, most of the Home Guard members are under compulsory military obligation and have completed first-term active duty in one of the regular armed services. The members are obligated to serve 50 hours or 6 days per year. The most commonly observed training pattern consists of one continuous week every year. Officers and specialists are obligated to serve an additional 14 days every three years.

Similarities and Differences

Tables 2 and 3 showed that the peacetime armies of both Denmark and Norway have about 20,000 men. In Denmark, about 30 percent are conscripts whereas in Norway they constitute 80 percent. The Danish conscripts on active duty are only in training for their reserve function, while Norwegian conscripts also are assigned to standing units. Danish standing units are manned solely by long-term volunteers.

Conscripts figure heavily in both countries' mobilization forces, even though Danish volunteers also are obligated to serve in mobilization units subsequent to their discharge from active duty; volunteering for additional regular active duty in the Standing Force does not serve as a substitute for reserve duty. This also holds true in

Table 4

TRAINING PATTERN FOR CONSCRIPTS IN THE NORWEGIAN ARMED FORCES^a

Service	First Term Active Duty (days)	Field Army	Refresher Training (avg.)	Local Defense (12+7) days (15+10) days	Service Life (avg.)	Number of Days of Obligatory Active Duty During the Obligatory Service Life
Army						
Privates ^b	365	4x21 days		24 years		468
Specialists	365	4x30 days		24 years		510
Naval Defense						
Navy	455		--	--	--	455
Coastal Artillery (CA)	365		4x20 days	21 years		445
Specialists (CA)	365		4x30 days	21 years		485
Air Defense						
Air Force	455		14 ^c	--	--	469
Air Artillery (AA)	365		4x20 days	18-20 years		445
Specialists (AA)	365		4x30 days	18-20 years		485

SOURCE: Ministry of Defense, *Tjenestetiden i forsvarret*, NOU 1972:32, Oslo, 1972, pp. 16-18, 48.^aAt any one time the training pattern (length and frequency of training) is determined by the *Storting*.^bThe concept of a "specialist" is left flexible in order to be able to call-up personnel needing extra training or retraining for an additional 9-10 days. Conscript officers serve longer and are excluded from this table.^cThis constitutes air defense exercises.

Norway. All volunteers or career military personnel who decide to return to civilian status are subject to the same reserve obligations imposed on their contemporaries who serve only their obligatory regular active-duty period.

Table 5 summarizes and compares some of the data on conscripts in Denmark and Norway. As pointed out earlier, the shorter active-duty period in Denmark is both an "apprentice" period preparing the conscript for his mobilization assignment and a period of basic training for those who volunteer for additional active duty in the Standing Force.

The relatively smaller annual man-day budget for reserve training in Denmark is partly justified by the shorter service "life" (nine years in Denmark versus 24 years in Norway), during which fewer organizational or technological changes requiring retraining can be expected.

To evaluate these countries' manpower policies and practices further requires an examination of how the various manpower categories are organized in their wartime force structures.

FORCE STRUCTURE

The previous section discussed the recruiting and augmentation of manpower and the time-phasing of military training over the total service life of the soldier, and this section discusses the organization of manpower and equipment into units and the ratio of forces in being to the mobilization component.

Although both Denmark and Norway have divisional commands, the largest basic operational unit (BOU) in their Field Armies is the brigade. The largest BOU in the Local Defense Force is the battalion, and in the Home Guard, the company.

To economize on manpower, defense planners must choose among three categories of manpower to fill units:¹

¹ Another choice that the defense planners obviously have to consider is *substitution between capital and labor*. Except for brief references, this topic is outside the scope of this study. However, the capital-labor substitution problem includes the choice between

Table 5

COMPARATIVE DATA ON CONSCRIPTION: DENMARK AND NORWAY

Data	Denmark	Norway
Percent of each age cohort completing first-term active duty in one of the Armed Services (approx.)	33	66
<u>Army:</u>		
First-term active duty	9 months	min. 12 months
Reserve "life" of a conscript	max. 8-1/3 years	about 24 years
Total service "life" of a conscript	max. 9 years	about 25 years
1978 man-day budget for reserve training		
Total	40,000	280,000
Per reservist ^a	.57	2.15
Total training provided to a conscript on the average ^a	275 days over 9 years	414 days over 25 years ^b

^a"On the average" is not a good indicator because the budgets in both countries are allocated on a priority basis. For example, high priority units or individuals with the most complex tasks or in need of retraining receive most reserve training.

^bIf compared with the numbers in the last column in Table 4, the 1978 man-day budget for reserve training does not allow the Norwegian Army to recall all conscripts for the maximum allowable active duty period.

- o volunteers;
- o conscripts;
- o civilians
 - directly hired (DoD employees)
 - indirectly hired (subcontractors, etc.)

The policies regarding hiring, contracting, or requisitioning civilian personnel or services are important in force structure considerations, but they are outside the scope of this study.

Denmark¹

Because of the geographical and demographic characteristics of the country and the fast means of communications, the Danish Army has traditionally relied rather heavily on mobilization. This reliance increased somewhat as a result of the 1973 Defense Agreement. The structure that has been completed since 1973 is shown in Table 6.

The 1973 Reorganization. Major features of the reorganization include the following:

1. Conscripts are on regular active duty for nine months in a Training Force. Only after the apprenticeship period are they assigned to a wartime function in the Augmentation Force or directly to the Mobilization Force.

2. The Army Wartime Force is structured around five armored infantry brigades of three major types. Three of the brigades belong to the Jutland Command and two to Zealand.

None of the Danish brigades is fully manned in peacetime.² Rather, a Standing Force of 8500 professional soldiers man key

different labor categories (volunteers, conscripts, civilians, or other suitable breakdowns).

¹Main sources: Chief of Defense, *Handout on the Danish Armed Forces* (various years), and information I obtained during a visit to Danish Defense Headquarters at Vedbaek in March 1978.

²Each brigade is composed of individuals and units from:
(a) *The Standing Force*: headquarter units, infantry battalion (Bornholm), reconnaissance squadron, armored battalions, artillery battalions--most of which are not fully manned in peacetime;

Table 6

DENMARK'S ARMY WARTIME FORCE STRUCTURE

Wartime Force (78,000)				
Covering Force (13,000)		Mobilization Force (65,000)		
5 Armored Inf. Brig., some HQ- and Art. units (25,000)		Other Smaller Units (53,000)		
Standing Force (8500)	Augmentation Force (4500)	Field Army Reserve Force (41,000)	Local Defense Force (24,000)	
Partly or fully manned high priority units or weapons	Mainly support sub-units	Covering Force Reserve (12,000)	Other Reserve Units (29,000)	
All-volunteer	Mainly conscripts dismissed after 9 mos. in the Training Force	Partly dismissed from Standing Force or Training Force, partly transferred from the Augmentation Force	Mainly transferred from the Augmentation Force or Covering Force Reserve	Dismissed conscripts and volunteers (those not required in the Field Army Reserve Force)
		Mainly to man engineer, transportation & supply units of the Brigades	Mainly support	
	Alarm recalls no regular refresher training	Refresher training up to a total of 40,000 man-days per year		
Min. 33 mos. of active duty	Max. 18 mos. in this reserve status	On the average: eight years in this status		

NOTE: Total length of time that a conscript is under military obligation: 9 years.
In addition to the above manpower of 78,000, the Danish Army can draw on the following manpower pool in wartime:

1. *Personnel Replacement Depot*: 12,000 men who constitute a pool of individuals released from assignment in the proper Mobilization Force for initial replacement of personnel losses.
2. *The Home Guard*: About 70,000 men with at least some military training.

The total land force wartime potential is therefore:

Wartime Force	78,000
Pers. Repl. Depot	12,000
Home Guard	70,000
Total	160,000

This is exclusive of reservists who are under military obligation but not assigned to the Wartime Force or to the Replacement Depot (approx. 50,000 with a special reporting order for discharged personnel): personnel who may be of use to the Army after outbreak of war--e.g., to refill the Replacement Depot.

positions, units, and weapons. Only immediate defense tasks can be undertaken by this force alone. In case of a crisis, units from the Augmentation Force are expected to be in place within 24 hours of the mobilization decision (M + 24 hours). Such units provide some immediate support functions. Subsequently, combat and support units and individuals from the Covering Force Reserve are called up. These 12,000 men bring standing units to their full wartime strength and full operations at the brigade level can take place.

Finally, other support units will be called up. This system of phased call-up is related to the priority of tasks involved. The whole mobilization process is expected to be completed within M + 3 days.

To ensure full manning in the event of a mobilization, each reserve unit is authorized at a manning level of 10 percent above the Table of Organization.¹ Surprise (alarm) call-ups have resulted in close to 100-percent manning levels. The Field Army draws some of its cadre personnel and support elements from among the 7250 men in administrative units, schools, etc.

About 7000 men in the Field Army Reserve Force of 41,000 men are assigned to a "temporary security force."² This force is organized into high priority reserve units in the Covering Force Reserve, and the members are provided with a special call-up order in case of mobilization. The remainder, about 34,000 men, are formed into lower priority units. When all these units are in place, sustained operations can be conducted.

Of the roughly 200 tanks in the Wartime Force, about 160 are fully manned in peacetime. The Standing Force is therefore able to

(b) *The Augmentation Force*: infantry companies, engineer companies, service support units; (c) *The Covering Force Reserve*: infantry and artillery battalions; and (d) *Other reserve units*: mainly combat and logistics support.

¹The Table of Organization (and equipment) sets out the authorized numbers of men and major equipments in a unit/formation.

²*Foreløpig sikringsstyrke.*

provide initial defense against limited but concentrated attacks on Danish territory.

Of the 78,000 men in the Army Wartime Force, about 10,000 are not fully equipped with modern battle uniforms. These men belong to the lowest priority units, mainly in the Local Defense Force.

3. A new "freshening" system was introduced with the Defense Agreement of 1973. Rather than refreshing the deteriorating skills of individuals and units, recently trained men and units replace the old ones at a rate that is related to the degree of complexity of functions or tasks. This means that a conscript is in reserve status in the Augmentation Force for a period of 18 months at the maximum.

4. The "lifetime" of a soldier--the total length of time that he is under military obligation for refresher training--is not to exceed nine years starting from the time of induction. After this period, he can be called up twice for a maximum of 24 hours, which in effect means that in peacetime he will not serve after nine years.

Limitation of the Reorganization. Major limitations associated with this new system include:

1. Limited training at the brigade level. Twice a year 14-day-long exercises take place, never longer. These exercises incorporate units and individuals from the Standing, Training, and Mobilization Forces. Units from the Augmentation Force are given one four-day "alarm recall" (no advance notice). This short time period does not permit any refresher training to take place at unit level.

2. The Danish Field Army's budget is insufficient for recalling reservists for refresher or mobilization training. For three years this annual man-day budget was 30,000; however, in 1977-1978 it was increased to 40,000. Even so, this limit only permits recall of high-priority units, some retraining of individuals in the Mobilization Force, and a surprise four-day (maximum) call-up for the Augmentation Force.¹

¹Of the 40,000 man-days, about 8000 are used for four alarm recalls of selected units in the Augmentation Force--about 500 men are called up for four days four times a year. The remainder of the man-days are allocated among high-priority units.

On the average, the conscripts are in reserve status for eight years. The Mobilization Force has about 350 units of company size with an average of 100 men each. If these 35,000 men were given, for example, seven days of refresher training each year, or 14 days every other year, this alone would require 245,000 man-days for refresher training annually. However, even with the new, higher number of authorized refresher training days, only 32,000 man-days are available for "refreshing" the skills of the men and units in the Mobilization Force.

3. The Training Force has a shortage of cadre personnel and officers. This shortage has delayed the build-up of the strengths (number and composition of units) as announced in the 1973 Defense Agreement. The problem was alleviated by the 1977 Defense Agreement. In that year the Defense Minister was given the authority to adjust the relative sizes of the various personnel categories as required, for example, by technological developments.¹ However, the units in the Training Force reach a skill level seen as "acceptable" with regard to the expected wartime tasks of the types and categories of units. However, the conditions of training during the nine months in the Training Force are important. Because the men are without any readiness obligation during this period, the units can devote themselves exclusively to training the men for their assignment in the Augmentation Force or the Mobilization Force.

Norway

As mentioned earlier, Norway's defense task is large relative to its population base; consequently, Norway has relied heavily on mobilization forces throughout the postwar period. In contrast to the Danish system, the Norwegian demographic characteristics and the vulnerability of the communications system have made it necessary to organize the standing force into one complete basic operational unit (BOU): an infantry brigade. This brigade and smaller units, a total

¹Defense Minister, "Bilag 2 til Forsvarsministerens skrivelse of 15. marts 1977," Copenhagen, March 15, 1977.

of 6500 men, are at all times deployed to the sparsely populated and strategically vulnerable North Norway.

The major features of the wartime organization are shown in Table 7. In contrast to Denmark, Norway has only one type of BOU. The infantry brigade consists of approximately 5500 men organized as follows:

Command: Staff, headquarters company, military, police platoon, signal company.

Maneuver units: Three infantry battalions, armored reconnaissance company (cavalry).

Tactical support units: Artillery battalion, heavy mortar infantry company, anti-tank platoon, light air defense battery, engineer company.

Administrative support companies: Transport, supply, supply and maintenance, medical.

In addition, there are support units organically outside the brigade structure--e.g., armor, artillery, supply--assigned to the division command (3 to 5 brigades) according to availability and need.

The Norwegian Field Army has 12 infantry brigades, only one standing. The remainder are mobilization brigades having about 15-percent full-time professional officers normally assigned to Defense Headquarters, Ministry of Defense, schools, and regiments in peacetime. The remainder of officers and all privates are reservists on recall from the civilian sector.

The peacetime organization of the Mobilization Force (Mobilization Field Army and Local Defense) consists of regiments. These regiments are administrative and caretaker units organized according to weapons. The wartime organization of the Mobilization Force draws units from the various regiments--e.g., infantry battalions from infantry regiments, artillery battalions from artillery regiments.

The number of full-time personnel in a regiment ranges between 40 and 50, approximately half of them civilian. The conscripts in

Table 7
NORWAY'S ARMY WARTIME FORCE STRUCTURE^a

Field Army (78,000)		
Standing Force (8000)	Mobilization Force (130,000)	
	Field Army Reserve (70,000)	Local Defense Force (60,000)
Standing readiness (preparedness) units: 1 infantry brigade and smaller units.	Mobilization units: 11 infantry brigades and smaller units.	Mobilization units: battalions and smaller units.
Deployment: 6500 men deployed to Northern Norway.	Deployment: 4 brigades earmarked for N. Norway (2 raised locally); the remainder to be deployed as needed.	Deployment: Locally (or as needed).
	Equipment: Similar or identical to the standing readiness units.	Equipment: Generally inherit from Field Army--"2nd generation."
Professional officers and NCOs. Conscript officers in training for mobilization functions.	Approximately 15% professional, full-time officers and NCOs, generally assigned elsewhere during peacetime; the remainder is conscript reserve officers.	
A few enlisted personnel on 3-year contracts.		
80% conscripts, avg. 20 yrs. who have completed at least 3 mos. basic training.	Dismissed conscripts, ages 20-34.	Dismissed conscripts, ages 35-44.
Readiness: M-day.	Ready and deployed: M + 2 days for high-priority brigades.	Readiness: M + 2 days.

^a Wartime Force = Standing Readiness Units + Field Army Reserve + Local Defense Force (+ Home Guard--80%)
(8000) + (70,000) + (60,000) + (64,000)
= 138,000 (+ 64,000 = 202,000).

the wartime units are drawn from the local population. Infantry regiments draw personnel from smaller areas than artillery regiments. The artillery units have more complex tasks, so these units recruit from a larger population base to get the best qualified personnel.

All 12 brigades are similarly organized and equipped. When the standing brigade receives new equipment or weapons, such equipment is also procured for the mobilization brigades. However, because trained personnel may not be available immediately, this new equipment is phased in gradually as conscripts are transferred from the standing force or as conscript reservists are recalled for retraining. The Local Defense Force generally "inherits" equipment from the Field Army, so the older personnel are familiar with the equipment and require little retraining. Therefore, the emphasis during the Local Defense Force recall period is on skill maintenance and exercises. One of two high-priority mobilization brigades in southern Norway is earmarked for early reinforcement of northern Norway and has "dual based" equipment; this brigade has access to training equipment in South Norway as well as another set prestocked in North Norway. The long-range-planning goal is to increase the budget sufficiently to prestock equipment for additional brigades in this sensitive northern area while ensuring that these brigades also have a complete set locally in case a transfer is undesirable or impossible.¹

Rather than the Danish "freshening system," Norway relies on skill maintenance and upgrading and retraining. The "freshening" is limited to letting conscripts remain in the Mobilization Field Army only until age 35; thereafter they are transferred to the Local Defense Force.

Brigade level exercises take place at least twice a year, often in association with a full-scale airlift of one mobilization brigade from South to North Norway. During recent years, this has taken place in association with NATO exercises that incorporate the Norwegian standing brigade, allied troops, and a Norwegian mobilization brigade--a total of about 15,000 troops. These high-priority

¹ Forsvarskommissjonen av 1974, Sec. 21.4.38.

exercises consume a substantial portion of the annual refresher training man-day budget. Hence, the lowest priority units are rarely recalled. In 1978 this annual man-day budget for refresher training was 280,000 man-days for the Army (the Field Army and the Local Defense Force).

The readiness of the Norwegian Army could be improved if more cadre personnel were employed, particularly in units with more complex tasks and equipment--e.g., artillery units. This would require more officers. However, like many West European armies, the Norwegian Army suffers from a shortage of officers as the post-war "bulge" is retired and the capacity for recruiting, training, and retraining new officers is limited.¹

COMPARISONS

Because Denmark expects a potential attack to take place anywhere, the standing force is organized into units dispersed around the country. And, because of the short distances involved, the Danes also expect to be able to rapidly augment the standing force. Therefore, regular, active manpower is used solely for manning high-priority combat units and key weapons and positions.

In contrast, Norway's strategically weakest point is the sparsely populated north, an area located far from sources of either external or major internal reinforcement. Norway therefore has its 8000-man combat-ready standing force structured into both combat and support units, the bulk of which is deployed to North Norway at all times. Because the population is concentrated in South Norway where the chance of a surprise attack is believed to be smaller, its defense is based on mobilization units.


Figure 1 provides a summary of the active-reserve wartime structures of the two countries' Field Armies.² The Danish wartime Field

¹*Forsvarskommissjonen av 1974, Sec. 13.4.*

²The active-reserve manpower structure of the Danish Land Force resembles that of the U.S. Army force structure where the reserve units are mainly support units. The relationship between the Norwegian Standing Field Army and the Mobilization Field Army is more

DENMARK

5 Armored Infantry Brigades plus smaller units (about 54,000)	
All volunteer, active duty	Standing (8500)
Mainly dismissed conscripts on immediate recall	Augmentation (45000)
Mainly dismissed former volunteers	Covering Force Reserve (12,000)
Mainly dismissed conscripts	Other Reserve Units (29,000)

 Standing portion of wartime force.

NORWAY

12 Infantry Brigades plus smaller units (about 78,000)	
1 Standing brigade plus smaller units (8000)	11 Mobilization Brigades plus smaller units (70,000)
Professional officer corps and conscript officers in training for mobilization functions.	15% of the officer corps is full-time professionals normally assigned elsewhere (adm., schools, etc.), remainder is reserve officers.
A few hundred enlisted men on three-year contracts, but mainly conscripts who have completed basic training	Mainly dismissed conscripts.

^a A Danish Armored Infantry Brigade has about 5000 men. A Norwegian Infantry Brigade has about 5500 men.

Fig. 1--Field Army: Active-reserve wartime structure^a

Army consists of five armored infantry brigades and the Norwegian of 12 light infantry brigades. The Danish forces are therefore more capital- or equipment-intensive and the Norwegian more labor-intensive.

As we have seen, the Danes have introduced an all-volunteer standing force and use conscripts solely for mobilization assignments. Both the Standing and the Mobilization Field Army in Norway are mainly conscript forces.¹

The flow of manpower through the ground forces of Denmark and Norway respectively is shown in Figs. 2 and 3. The vertical dimension in both figures indicates the size of the age cohorts. The horizontal dimension in Fig. 2 indicates the length of time that individual Danish soldiers have been associated with the military. The figure itself then shows the manpower composition of the various components of the ground force and how individuals are "processed" from one component to another. Because it is easy to predict in which component a Norwegian conscript is at a given age, the horizontal dimension in Fig. 3 measures the average age span of individuals in the age group; otherwise, it is the same.²

The figures show that Denmark and Norway do not recruit directly into mobilization units. Even so, this study showed that each country's policies differ. In Denmark, the conscripts first receive "apprentice" training in a separate Training Force, bypass the Standing Force, and next, upon discharge from regular active duty,

comparable with the relationship between the U.S. Army and the Army National Guard. The U.S. Army National Guard is expected to perform missions similar to the U.S. Army's standing units. However, the National Guard often receives "second generation" equipment from the Army, analogous to the Local Defense Force in Norway.

¹The Norwegian Defense Commission suggested in March 1978 that Norway transform some of the infantry brigades to armored infantry brigades. In addition to requiring significant funds for initial equipment procurement, such a change may also require more highly trained personnel. *Forsvarskommisjonen av 1974*, Secs. 21.4.13-35.

²The basic idea for these figures is drawn from Conny Jägsander, Major, Swedish Army, "Krigsorganisationens behov av personal," *Arménytt, Special 79*, p. 11.

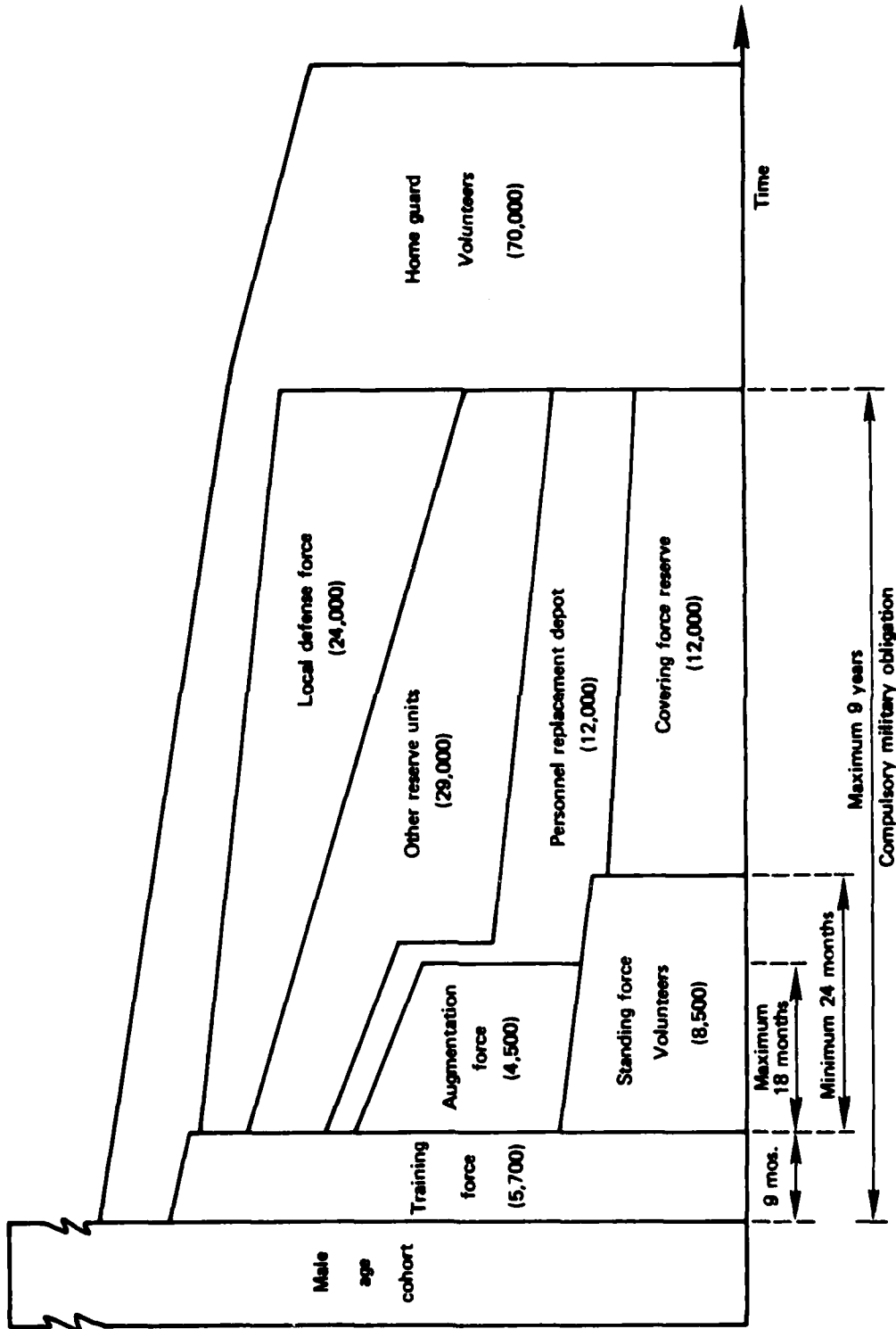


Fig. 2 — Denmark: ground forces

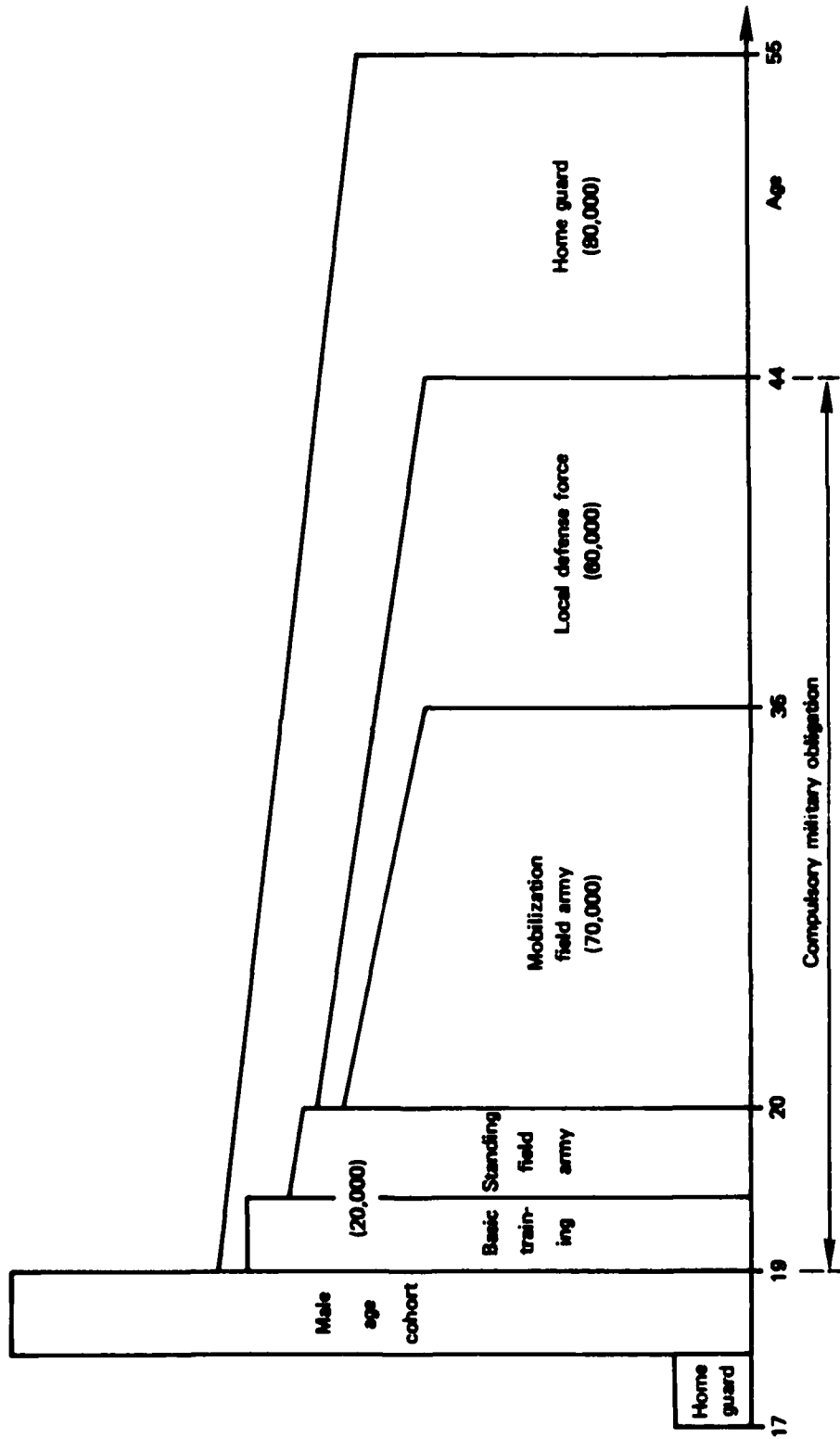


Fig. 3 — Norway: ground forces

are assigned directly to mobilization units. A volunteer or enlisted man first receives apprentice or basic training for nine months, then is assigned to the Standing Force for at least two years, and last, upon discharge from regular active duty, is assigned to a mobilization unit. In Norway, neither volunteers nor conscripts bypass the Standing Force.

Both Norwegian and Danish policies assume that it takes an average conscript about nine months to be fully trained for his function. Upon completion of training, a Danish conscript is assigned to a mobilization unit. In Norway, he is further needed for standing readiness purposes. Denmark also differentiates between tasks; long-term volunteers are given the most complex tasks in the mobilization units.¹

The reserve training task in Norway and Denmark is limited mainly to skill maintenance and to having a Mobilization Force that is ready for deployment within hours after mobilization.² An active-duty conscript is trained for and is expected to fulfill the same wartime function as the one he will be assigned to in the Mobilization Force. Hence, upon his initial entry into the armed forces, his lifetime assignment is determined. Only in rare cases will he be reassigned to a completely new task and generally only as a consequence of new skills he has acquired in the civilian sector that are relevant to the Mobilization Force. Reassignment may also take place because of new equipment with a different technology or

¹Other countries also tailor manpower policies to functional priorities. West Germany, for example, releases to reserve status manpower for which there is little use in peacetime and which requires little military skill maintenance; e.g., cooks, chauffeurs, and medical personnel. Some West German units are therefore less than fully manned in peacetime, but those released are on immediate recall in case of crisis.

²In the United States, the reserve training task is expanded to include skill achievement for those with no prior military service. To some extent, because reserve duty is not a natural or preplanned continuity of the active duty period, skill achievement also applies to those with prior service. Post-mobilization training is generally required to achieve full readiness.

because of reorganization of the mobilization units.¹

CONCLUSIONS

Analysis of the ground forces of Denmark and Norway that defend strategically critical areas illustrates that their contrasting arrangements are responses to extremely different conditions of population density, terrain, and internal communication. When geographic and demographic differences are taken into account,² the Danish and Norwegian ground force structures (defined in manpower terms) seem to be appropriate. If Norway adopted the Danish force structure and associated deployment policies--or vice versa--the defense capabilities of both nations would be reduced. One may conclude that force structures are not "standardized" nor should they be.

The shorter active-duty period demanded of conscripts in Denmark may be justified because of the simpler tasks they are expected to perform, and because they are exclusively trained for their reserve function. Norwegian conscripts also have to perform tasks in the standing force during their active-duty period (for nine out of twelve months) so both the requirement for additional training and the need for readiness forces require at least three additional months of active duty.

The fewer days of refresher training or reserve duty observed in Denmark may be justified by the shorter time that Danish conscripts are obligated for peacetime mobilization or reserve duty.

¹In addition to specialized training, Norwegian conscripts tend to be "cross-specialized" because they serve both in the standing and the mobilization force. The units are less dependent on replacements in case of attrition, and deployment before a unit is 100-percent manned is facilitated.

Under the new West German Army force structure announced in October 1978, the wartime companies will be reduced in size. Some German officers have expressed concern that this reduction in manpower manning levels requires 100-percent manning before the unit is fully operational.

²The economic and manpower resource base in the two countries is similar.

This period is a maximum of eight years in Denmark and about 24 years in Norway.

The shorter total training period of conscripts in Denmark is also partly offset by the much larger proportion of long-term volunteers. The Standing Force is an all-volunteer force, and former long-term volunteers figure significantly in the reserve units.

Because of the greater variance in service terms of conscripts and volunteers and the higher ratio of long-term volunteers observed in Denmark, we may conclude that the Danish defense planners have been better able to tailor service terms to function than have the Norwegian defense planners.¹ In particular, Norwegian mobilization units might benefit from the use of more cadre personnel in heavy-armored and maintenance units.

Norwegian manpower policies are characterized by an emphasis on conscription, a short active-duty period, an extended period of retention in reserve status with limited reserve training, and a significant and fully equipped mobilization component. The technology best adapted to such manpower policies is stable, cheap, and simple to operate. Even so, in spite of efforts to procure weapons with such characteristics, part of the annual man-day budget for reserve training is devoted to retraining. It is clear that not only does technology influence manpower policies, but manpower policies and practices also influence equipment procurement policies.

It is also apparent that defense capability depends on the quantity and quality of manpower upon induction as well as the utilization of various manpower categories (assignment, training, reassignment, etc.) within the defense organization.

A study of manpower policies and practices along the lines of this Note should also be done for other NATO and Warsaw Pact nations. Systematic data collection for such a study must include at least the following information:

¹This conclusion holds with respect to ground forces only. Both the Air Force and the Navy in Denmark and Norway consist mainly of long-term personnel.

- o Pre-induction training relevant to the military sector.¹
- o Length of active duty, length of reserve duty, and the frequency of reserve training.
- o Length of total military obligation (active plus reserve).
- o Functional assignments and reassignments during the military "life-span" of categories of manpower.
- o Unit structure of the armed forces and the role of conscripts and volunteers and of active and reserve forces in the wartime organization.

A multi-dimensional assessment of manpower policies is complicated, costly, and time-consuming, but it results in a more meaningful evaluation of the balance of (man) power than an assessment of only numerical measures.

¹In the USSR, for example, youth are given military training as part of their regular schooling in the civilian sector. See Herbert Goldhamer, *The Soviet Soldier*, Crane, Russak & Co., Inc., New York, 1975, Chapter 2.